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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,205	BALLIN ET AL.	
	Examiner	Art Unit	
	Eunhee Kim	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-66* is/are rejected.

7)☒ Claim(s) *1-59,63,64 and 66* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/21/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-66 are presented for examination.

Claim Objections

2. Claims 1-59, 63-64, and 66 are objected to because of the following informalities:

As per claims 2-28, 30, 33, 36-41, 43-56, and 64, the word "A" at the beginning would be better as "The".

As per claim 1, 3, 5-25, 27-29, 31-36, 38, 42-59, 63-64, and 66, the word "behaviour" or "behavioural" would be better as "behavior" or "behavioural".

As per claim 14, comma is missing after "the framework" in line 3, so it would be better as "the framework,".

As per claim 14, the phrase "a plurality of plurality of" in line 4 would be better as "a plurality of".

As per claim 21, the phrase "the group" in line 2 would be better as "a group".

As per claim 25, the phrase "the result" in line 3 would be better as "a result".

As per claim 26, the phrase "the average" in line 2 would be better as "an average".

As per claim 31, the word "its" is unclear what it refers.

As per claim 41, the phrase "the group" in line 2 would be better as "a group".

As per claim 52, the word "counselling" in line 5 would be better as "counseling".

A per claim 64, it is an improper claim because it is dependent from itself.

Appropriate correction is required.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

> Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 34 and 35 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 36 and 37 of U.S. application number 10/549750. Although a method of generating behavior claimed U.S. application number 10/549750 are incorporated with a behavioral translator, they are not patentably distinct from each other because the present claimed invention is a broader version of generating behavior method in U.S. application number 10/549750.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 24, 33, 55-62, and 65-66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 24, it recites the limitation "the virtual environment" in line 3. There is insufficient antecedent basis for this limitation in the claim.

As per claim 33, it recites the limitation "said articulate object" in line 6. There is insufficient antecedent basis for this limitation in the claim.

As per claim 55 and 56, they recite the limitation "the apparatus" in line 2. There is insufficient antecedent basis for this limitation in the claim.

As per claim 57- 60, they recite the limitation "A behavioural design interface" in claim 57, "A device" in claim 58 and 59, and "A network" in claim 60. There is insufficient antecedent basis for this limitation in the claim while the independent claim recites "A behavoural controller".

As per claim 61 and 62, they recite the limitation "A computer program" in claim 61 and "A device" in claim 62. There is insufficient antecedent basis for this limitation in the claim while the independent claim recites "A method".

As per claim 65 and 66, they recite the limitation "A platform". There is insufficient antecedent basis for this limitation in the claim while the independent claim recites "A virtual environment".

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 61-66 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claimed invention does not fall within at least one of the four categories of patent eligible subject matter recited in 35 U.S.C. 101 (process, machine, manufacture, or composition of matter). As per claim 61, "A computer program" is at best software, per se, lacking the necessary hardware to fall into a statutory category of invention.

As per claim 65-66, "A platform" arranged to support the virtual environment is at best software, per se, lacking the necessary hardware to fall into a statutory category of invention.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 5-12, 15-20, and 22-66 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (Autonomous Behavior Control of Virtual Actors Based on the AIR Model).

As per claim 1, Sato et al. discloses a method of generating behaviour for an object under the control of a behavioural controller (Abstract, Introduction), the method comprising the steps of:

receiving input associated with one or more behavioural actions (Pages 113-118);

inferring a plurality of behavioural parameter values from said input in accordance with a behavioural framework arranged to generate behaviour by the object (Pages 113-118);

deriving output from the inferred plurality of behavioural parameter values(Pages 113-118); and

generating equivalent behaviour by the object using the output derived from the parameter values (Pages 113-118).

As per claim 5, Sato et al. discloses wherein input received is associated with a plurality of behavioural actions, and each parameter values inferred for is determined by a combination of said plurality of behavioural action inputs (Pages 113-118).

As per claim 6, Sato et al. discloses wherein the input comprises a set of at least one behavioural parameter values directly associated with output which generates the behavioural action, wherein in the step of inferring, at least one or more other behavioural parameter values are inferred from which further output is derived to generate equivalent behaviour to the behavioural action (Pages 113-118).

As per claim 7, Sato et al. discloses wherein the framework comprises a plurality of nodes, each node associated with a function operating on one or more parameter values to provide output which modifies a characteristic of the behaviour of the object (Pages 113-118).

As per claim 8, Sato et al. discloses wherein the output produced by a function operating on one or more behavioural parameter values provides input to an animation system to generate the behaviour (Pages 113-118).

As per claim 9, Sato et al. discloses wherein the function operates on at least one behavioural parameter value assigned uniquely to the node (Pages 113-118).

As per claim 10, Sato et al. discloses wherein the function operates on at least one behavioural parameter value which is a global parameter value available for use by any node of the framework (Pages 113-118).

As per claim 11, Sato et al. discloses wherein said global parameter value is associated with a mood state of the object, wherein the characteristic of the behaviour of the object provided by the output of a node of the framework is modified to indicate the mood the object is in (Pages 113-118).

As per claim 12, Sato et al. discloses wherein the node which generates output from input using a function operating on an internal parameter value associated with a

personality trait affecting the characteristic of the behaviour of the object (Pages 113-118).

As per claim 15, Sato et al. discloses wherein in the step of generating equivalent behaviour in the object, the equivalent behaviour is generated in an articulate object (Pages 113-118).

As per claim 16, Sato et al. discloses wherein in the step of generating equivalent behaviour in the object, the equivalent behaviour comprises facially expressive behaviour (Pages 113-118).

As per claim 17, Sato et al. discloses sherein the equivalent behaviour by the object comprises a plurality of behavioural actions performed in a predetermined sequence (Pages 113-118).

As per claim 18, Sato et al. discloses wherein the equivalent behaviour by the object comprises a plurality of behavioural actions are performed in a random order (Pages 113-118).

As per claim 19 Sato et al. discloses wherein the behavioural actions are performed over a period of time (Pages 113-118).

As per claim 20, Sato et al. discloses wherein one or more of said plurality of behavioural actions are performed simultaneously (Pages 113-118).

As per claim 22, Sato et al. discloses wherein the received input is derived from a behavioural action by the object which has been induced by direct manipulation of the object by a human user (Pages 113-118).

As per claim 23, Sato et al. discloses wherein the received input is derived from a behavioural action by one or more other objects interacting with the object (Pages 113-118).

As per claim 24, Sato et al. discloses wherein the object is a virtual object operating in a virtual environment, wherein the received input is derived from a behavioural action by one or more other articulate virtual objects interacting with the object in the virtual environment (Pages 113-118).

As per claim 25, Sato et al. discloses wherein the plurality of inputs derived from each of said one or more other objects is processed according to a predetermined processing scheme and the result of the processing is used to infer said plurality of behavioural parameter values (Pages 113-118).

As per claim 26, Sato et al. discloses wherein the processing scheme determines the average of each of said plurality of inputs (Pages 113-118).

As per claim 27, Sato et al. discloses wherein the received input includes input associated with a behavioural action performed by a user of the behavioural controller (Pages 113-118).

As per claim 28, Sato et al. discloses wherein the method further comprises the step of:

translating a behavioural action received as input into a culturally equivalent behavioural action (Pages 113-118), and

generating equivalent behaviour to the culturally equivalent behavioural action (Pages 113-118).

As per claim 29, Sato et al. discloses a method of controlling the behaviour of an articulate object, the method comprising the steps of:

assigning a value to a behavioural parameter set associated with a behavioural characteristic of the object using a behavioural design interface arranged to provide input to a behavioural controller for the object, each said behavioural parameter set comprising at least one parameter affecting the behavioural characteristic (Pages 113-118);

associating each parameter in the parameter set with a parameter value obtained by performing a function on the assigned value with a default value defined by a behavioural profile (Pages 113-118);

inputting the parameter value to the behavioural controller for the object; inferring from said input, output generated by the behavioural controller (Pages 113-118);

associating the output with a behavioural action by the object (Fig. 1- 18 and the description); and

causing the object to perform the behavioural action (Pages 113-118).

As per claim 30, Sato et al. discloses wherein the function is an identity function (Pages 113-118).

As per claim 31, Sato et al. discloses a method of directly manipulating an object to control its behaviour (Abstract and Introduction), the method comprising the steps of:

manipulating the object to perform a behavioural action (Pages 113-118);

providing input representing the behavioural action to an output node of a behavioural framework, the output node being also arranged to provide output which is used to generate equivalent behaviour by the object, mapping the input received by the output node of the behavioural framework within the framework to derive a set of at least one parameter values for other behavioural nodes of the framework (Pages 113-118);

inferring from the set of at least one parameter values derived a set of output values which will generate other equivalent behaviour by the object (Pages 113-118).

As per claim 32, Sato et al. discloses a method of inferring a plurality of internal parameter values for a behavioural controller for an object (Abstract and Introduction), the method comprising the steps of:

receiving input representing a behavioural action (Pages 113-118);

inferring from said received input a set of at least one output values which corresponds to an equivalent behavioural action by the object (Pages 113-118); and

inferring a value for each said plurality of internal parameters from said set of at least one output values, wherein the value inferred for each said plurality of internal parameters produces output by the behavioural controller resulting in equivalent behaviour to the equivalent behavioural action (Pages 113-118).

As per claim 33, Sato et al. discloses generating said set of output values associated with said equivalent behaviour using said inferred plurality of parameter values (Pages 113-118); and

causing said articulate object to perform said behaviour (Pages 113-118).

As per claim 34, Sato et al. discloses a method of generating behaviour in an object under the control of a behavioural controller comprising a framework of nodes (Abstract and Introduction), the method comprising the steps of:

at least one node receiving input associated with a behavioural action (Pages 113-118);

each said at least one node mapping received input to output (Pages 113-118);

inferring a plurality of behavioural parameter values for other nodes in the framework using said output (Pages 113-118);

mapping the received input using said inferred behavioural parameter values to provide output by the behavioural controller which generates equivalent behaviour by the

object (Pages 113-118).

As per claim 35, Sato et al. discloses a method of generating behaviour in an object under the control of a behavioural controller (Abstract and Introduction), the method comprising the steps of:

receiving input associated with a behaviour action (Pages 113-118);

mapping said received input to a set at least one output values which corresponds to equivalent behaviour by the object (Pages 113-118);

inferring a plurality of behavioural parameter values from said set of at least one output values in accordance with a behavioural framework arranged to generate behaviour by the object (Pages 113-118); and

generating equivalent behaviour in the object using said parameter values by loading these into the behavioural controller (Pages 113-118).

As per claim 36, Sato et al. discloses wherein the parameters of the behavioural framework are inferred and are time-varying (Pages 113-118).

As per claim 37, Sato et al. discloses wherein the parameters values inferred are time-varying (Pages 113-118).

As per claim 38, Sato et al. fails discloses wherein the behaviour of the object is generated in real-time in response to receiving input associated with a behavioural action

(Introduction, Pages 113-118).

As per claim 39, Sato et al. discloses wherein the object is a virtual object provided in a virtual environment (Pages 113-118).

As per claim 40, Sato et al. discloses wherein the object is a robotic object (Pages 113-118).

As per claim 41, Sato et al. discloses wherein the object is selected from the group of objects consisting of: a real toy; a character in a game; an avatar (Pages 113-118).

As per claim 42, Sato et al. discloses a behavioural controller arranged to generate behaviour in an object (Pages 113-118), the controller comprising:

means to receive input associated with a behavioural action (Pages 113-118);

means to infer a plurality of behavioural parameter values from said input in accordance with a behavioural framework arranged to generate behaviour by the object (Pages 113-118) (Pages 113-118);

means to derive output from the inferred plurality of behavioural parameter values (Pages 113-118); and

means to generate equivalent behaviour by the object using the output derived from the parameter values (Pages 113-118).

As per claim 43, Sato et al. discloses wherein the means to generate equivalent behaviour comprise means to forward the output derived from the parameter values to an animation system arranged to operate on the output to cause the appropriate behaviour to be animated by the object (Pages 113-118).

As per claim 44, Sato et al. discloses wherein, said receiving means include means to receive as input at least one parameter value from a source external to the behavioural framework of the object (Pages 113-118).

As per claim 45, Sato et al. discloses wherein the means to infer a plurality of behavioural parameter values comprises a framework of nodes, each behavioural node arranged to map at least one input parameter value to at least one output parameter value (Pages 113-118).

As per claim 46, Sato et al. discloses wherein at least one node is arranged to map at least one parameter value taken from the group including:

a parameter defined for each node within the behavioural framework (Pages 113-118);

a parameter defined within each node of the behavioural framework (Pages 113-118); and,

a parameter defined externally to the behavioural framework (Pages 113-118).

As per claim 47, Sato et al. discloses wherein said means to receive input is arranged to receive input from a behavioural design interface, the behavioural design interface comprising:

means arranged to allow the assignment of a value to a behavioural parameter set comprising at least one behavioural parameter defined according to the behavioural framework of the object (Pages 113-118); and

means arranged to operate on the value assigned to the behavioural parameter set by a predetermined function to determine the value of the internal parameter (Pages 113-118).

As per claim 48, Sato et al. discloses wherein the object is a virtual object arranged to operate within a virtual environment (Pages 113-118).

As per claim 49, Sato et al. discloses wherein output from the behavioural controller is provided in a form suitable for being received as input by a behavioural controller of another object (Pages 113-118).

As per claim 50, Sato et al. discloses wherein the behavioural controller further comprises a translation element for mapping received input derived from behaviour consistent with a first culture to input consistent with a second culture (Pages 113-118).

As per claim 51, Sato et al. discloses wherein the behavioural controller further comprises a translation element for mapping behavioural output consistent with a first

predefined culture to behavioural output consistent with a second predefined culture (Pages 113-118).

As per claim 52, Sato et al. discloses wherein the object is a virtual object arranged to operate within a virtual environment is taken from any one of the group of virtual environments consisting of:

a virtual computer game, a virtual on-line meeting, an on-line game, an on-line chat-room, an avatar hosted meeting (Pages 113-118);

an avatar counselling meeting (Pages 113-118);

an avatar based mediation environment (Pages 113-118);

an avatar based sales environment (Pages 113-118);

an on-line collaboration environment (Pages 113-118);

an on-line customer relationship management environment (Pages 113-118).

As per claim 53, Sato et al. discloses wherein the means arranged to receive input comprising a set of at least one behavioural parameter values directly associated with output which generates the behavioural action, wherein the means to infer is arranged to infer at least one or more other behavioural parameter values from which further output is derived to generate equivalent behaviour to the behavioural action (Pages 113-118).

As per claim 54, Sato et al. discloses wherein the means arranged to receive input receives input comprising at set of at least one behavioural parameter values directly associated with output corresponding to a direct manipulation of the object (Pages 113-

118).

As per claim 55, Sato et al. discloses wherein a user provides the input to the apparatus (Pages 113-118).

As per claim 56, Sato et al. discloses wherein a software agent provides the input to the apparatus (Pages 113-118).

As per claim 57, Sato et al. discloses a behavioural design interface (Pages 113-118), the interface comprising:

means arranged to allow the assignment of a value to a behavioural parameter set, the parameter set comprising at least one parameter value associated with a behavioural characteristic of the object, wherein the value assigned using the interface is provided as input to the behavioural controller (Pages 113-118).

As per claim 58, Sato et al. discloses a device arranged to have a suite of at least one computer programs stored thereon, the suite of at least one computer programs being executable on the device so as to cause the device to function as a behavioural controller (Pages 113-118).

As per claim 59, Sato et al. discloses a device arranged to have a suite of at least one computer programs stored thereon, the suite of at least one computer programs being

executable on the device so as to cause the device to function as a behavioural design interface (Pages 113-118).

As per claim 61, Sato et al. discloses a computer program product comprising a computer program, or a suite of computer programs, comprising a set of instructions (Pages 113-118).

As per claim 60, Sato et al. discloses a network comprising a plurality of computer-type devices arranged to be capable of communicating with each other, at least one of the devices comprising a device (Pages 113-118), the other devices being arranged to remotely access at least part of the suite of at least computer programs, to enable objects operating within the environments of said other devices to be controlled by the suite of at least one computer programs (Pages 113-118).

As per claim 62, Sato et al. discloses a device arranged to have a computer program stored thereon, the computer program being executable on the device (Pages 113-118).

As per claim 63, Sato et al. discloses a virtual environment in which a plurality of virtual objects are arranged to interact under the observation of one or more users participating in the virtual environment, wherein each one of said plurality of virtual objects in the virtual environment displays semi-autonomous behaviour generated using a behavioural system using one or more inputs derived from one or more of the behavioural

actions of one or more of the other virtual objects in the virtual environment (Pages 113-118).

As per claim 64, Sato et al. discloses which each user participating in the virtual environment is able to control the semi-autonomous behaviour generated by providing input to the behavioural system (Pages 113-118).

As per claim 65, Sato et al. discloses a platform arranged to support the virtual environment as claimed in claim 64, and providing means for one of said one or more users participating in the virtual environment to provide said input (Pages 113-118).

As per claim 66, Sato et al. discloses, wherein the user provides said input via a displayed behavioural design interface, the input received being processed by a behavioural controller arranged to control the behaviour generated by said behavioural system (Pages 113-118).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 2-4 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (Autonomous Behavior Control of Virtual Actors Based on the AIR Model), in view of Ball et al. (US Patent No. 6,212,502).

Sato et al. teaches most all of the instant invention as applied to claims 1, 5-12, 15-20, and 22-66 above.

As per claim 2, Sato et al. fails to teach wherein the framework has an internally flexible structure.

Ball et al. teaches wherein the framework has an internally flexible structure (Abstract, Col. 4 lines 55-67, Col. 5 lines 1-48, Fig. 1 –9, the description).

Sato et al. and Ball et al. are analogous art because they are both related to a modeling emotion and personality in a virtual environment.

Therefore, it would have been obvious to one of ordinary skill in the art of at the time the invention was made to have include the teaching of Ball et al., in the method of modeling and projecting emotion and personality from a computer user interface of Sato et al. because a flexible structure for a virtual behavior modeling is a well known process in a method for modeling and projecting emotion and personality in modeling of virtual behavior control. Ball et al. teach the advantages of system that includes a Bayesian Networks to have more flexible, adaptive, and human-oriented system (Col. 1 lines 10-20, Col. 2 lines 16-29).

As per claim 3, Sato et al. fails to teach wherein the framework comprises a hierarchy of behavioural nodes.

Ball et al. teaches wherein the framework comprises a hierarchy of behavioural nodes (Abstract, Col. 4 lines 55-67, Col. 5 lines 1-48, Fig. 1 –9, the description).

As per claim 4, Sato et al. fails to teach wherein the framework is dynamically flexible.

Ball et al. teaches wherein the framework is dynamically flexible (Abstract, Col. 4 lines 55-67, Col. 5 lines 1-48, Fig. 1 –9, the description).

As per claim 13, Sato et al. teaches wherein the input is received at an output node of the framework (Pages 113-118), and

the received input comprises a set of one or more parameter values directly associated with output generating the behavioural action (Pages 113-118), and in the step of inferring further parameter values (Pages 113-118).

Sato et al. fails to teach a reverse mapping is performed from the set of already determined parameter values to infer a further plurality of behavioural parameter values for the internal nodes of the framework.

Ball et al. teaches a reverse mapping is performed from the set of already determined parameter values to infer a further plurality of behavioural parameter values for the internal nodes of the framework (Abstract, Col. 4 lines 55-67, Col. 5 lines 1-48, Fig. 1 –9, the description).

As per claim 14, Sato et al. teaches wherein in the step of receiving input, input is received at a global parameter node of the framework (Pages 113-118).

Sato et al. fails to teach the nodes of the network map the received input to one or more other nodes to infer a plurality of behavioural parameter values for the one or more other nodes of the framework.

Ball et al. teaches the nodes of the network map the received input to one or more other nodes to infer a plurality of behavioural parameter values for the one or more other nodes of the framework (Abstract, Col. 4 lines 55-67, Col. 5 lines 1-48, Fig. 1 –9, the description).

15. Claims 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (Autonomous Behavior Control of Virtual Actors Based on the AIR Model), in view of Hatlelid et al. (US Patent No. 6,522,333).

Sato et al. teaches most all of the instant invention as applied to claims 1, 5-12, 15-20, and 22-66 above.

As per claim 21, Sato et al. teaches wherein the behaviour includes a behavioural action taken from the group including: eye gaze, limb movement, and stance (Pages 113-118), except eye gaze and speech.

Hatlelid et al. teaches eye gaze and speech (Fig. 4a and 10a, Col. 1 lines 32-40, Col. 3 lines 18-45).

Sato et al. and Hatlelid et al. are analogous art because they are both related to a modeling emotion and personality in a virtual environment.

Therefore, it would have been obvious to one of ordinary skill in the art of at the time the invention was made to have include the teaching of Hatlelid et al., in the method of modeling and projecting emotion and personality from a computer user interface of Sato et al. because a facial movement like eye gaze and speech for a virtual behavior modeling is a well known process in a method for modeling and projecting emotion and personality in modeling of virtual behavior control. Hatlelid et al. teach the advantages of system that is compatible with the e-mail system and can also provide valuable emotional and behavioral information (Col. 1 lines 59-64).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Liles et al. disclose(s) Use of avatars with automatic gesturing and bounded interaction in on-line chat session (US Patent No. 5880731).

Matsuda et al. disclose(s) Information processing apparatus, information processing method and information providing medium (US Patent No. 6292198).

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eunhee Kim whose telephone number is 571-272-2164. The examiner can normally be reached on 8:30am-5:00pm Monday to Friday.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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